

CLAIMS

1. An optical recording medium containing at least one recording layer (A) capable of recording and playback with a laser light,
5 wherein said recording layer (A) contains at least one kind of organic compound,

wherein the percentage change ($|[a^2 - a^1]/a^1| \times 100$) of the recording layer thickness (a^2) at the recorded site of said recording layer (A) after recorded with a laser light compared
10 with the recording layer thickness (a^1) at unrecorded site of said recording layer (A) is less than 25% , and the amount of change ($|a^2 - a^1|$) of the recording layer thickness (a^2) at recorded site of said recording layer (A) after recorded with laser light compared with the recording layer thickness (a^1) at unrecorded
15 site of said recording layer (A) is less than 15 nm.

2. The optical recording medium according to claim 1, wherein said recording layer (A) is able to be formed by a coating method.

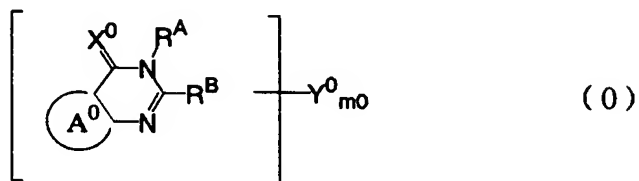
20 3. The optical recording medium according to claim 2, wherein the organic compound is organic compound (B) that comprises a six-membered ring structure composed of four carbon atoms and two nitrogen atoms and a substituted or unsubstituted amino group bonded.

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4. The optical recording medium according to any of claims 1 to 3, wherein the recording laser power is 6 mW or lower.

5. The optical recording medium according to claim 3, wherein one of tautomeric structures of organic compound (B) is represented by general formula (0):

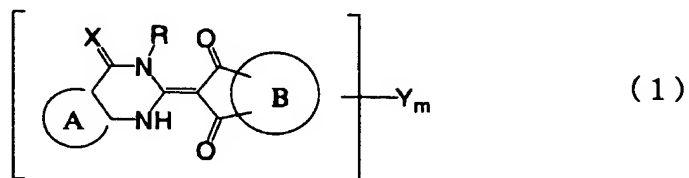
5 [Formula 1]



(wherein ring A⁰ represents a substituted or unsubstituted carbocyclic aromatic ring or a substituted or unsubstituted heterocyclic aromatic ring; R^A and R^B represent a hydrogen atom or a substituent; X⁰ represents a divalent substituent; Y⁰ represents a substituted or unsubstituted amino group; and m⁰ represents the number of Y⁰).

6. The optical recording medium according to claim 5, wherein one of the tautomeric structures of organic compound (B) is represented by general formula (1):

[Formula 2]

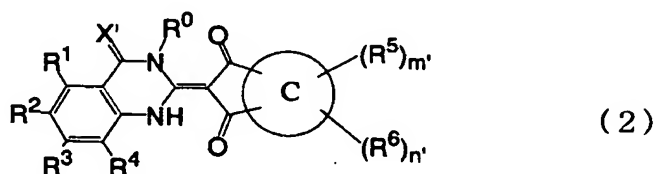


(wherein ring A and ring B represent a substituted or unsubstituted carbocyclic aromatic ring or a substituted or unsubstituted heterocyclic aromatic ring; R represents a

hydrogen atom or a substituent; X represents a divalent substituent; Y represents a substituted or unsubstituted amino group; and m represents the number of Y).

- 5 7. The optical recording medium according to claim 6, wherein one of the tautomeric structures of organic compound (B) is represented by general formula (2):

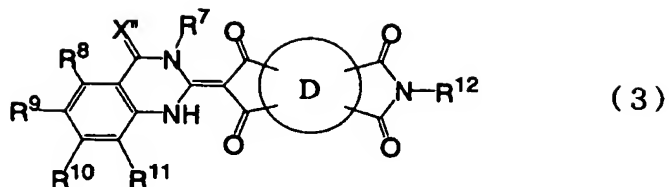
[Formula 3]



- 10 (wherein ring C represents a substituted or unsubstituted carbocyclic aromatic ring or a substituted or unsubstituted heterocyclic aromatic ring; X' represents a divalent substituent, each of R^0 - R^6 represents independently a hydrogen atom or a substituent; m' represents the number of R^5 ; n' represents the
- 15 number of R^6 ; at least one group selected from R^1 - R^4 is a substituted or unsubstituted amino group; in a combination among R^1 - R^4 and a combination of R^5 and R^6 , each substituent within each combination may independently bond via a linkage group to form a ring structure together with the atom to which it bonds; and
- 20 each of m' and n' represents 0 or an integer of 1 or more).

8. The optical recording medium according to claim 7, wherein one of the tautomeric structures of organic compound (B) is represented by general formula (3):

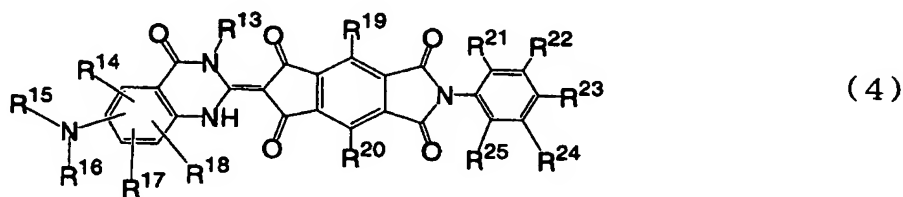
[Formula 4]



(wherein ring D represents a substituted or unsubstituted carbocyclic aromatic ring or a substituted or unsubstituted heterocyclic aromatic ring; X'' represents a divalent substituent, each of R⁷-R¹² represents independently a hydrogen atom or a substituent; at least one group selected from R⁸-R¹¹ is a substituted or unsubstituted amino group; and each of R⁸-R¹¹ may independently bond via a linkage group to form a ring structure together with the carbon atom to which it bonds).

9. The optical recording medium according to claim 8, wherein one of the tautomeric structures of organic compound (B) is represented by general formula (4):

15 [Formula 5]

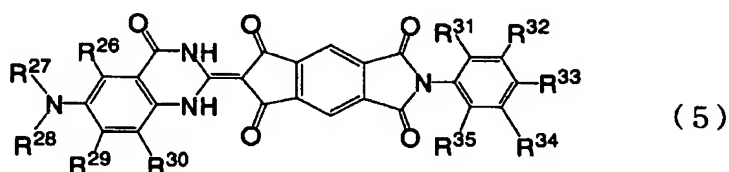


(wherein each of R¹³-R²⁵ represents independently a hydrogen atom or a substituent; and in a combination among R¹⁴-R¹⁸ and a combination among R²¹-R²⁵, each substituent within each combination may independently bond via a linkage group to form a ring structure together with the carbon atom and/or nitrogen

atom to which it bonds).

10. The optical recording medium according to claim 9, wherein one of the tautomeric structures of organic compound (B) is represented by general formula (5):

[Formula 6]



(wherein each of R^{26} - R^{35} represents independently a hydrogen atom or a substituent; and in a combination among R^{26} - R^{30} and a combination among R^{31} - R^{35} , each substituent within each combination may independently bond via a linkage group to form a ring structure together with the carbon atom and/or nitrogen atom to which it bonds).

11. The optical recording medium according to claim 10, wherein at least one group among R^{31} - R^{35} is a substituted alkoxy group having a heterocyclic residue containing at least one heteroatom.

12. The optical recording medium according to claim 10, wherein the atoms constituting each substituent represented by R^{26} - R^{35} are selected from a carbon atom, a hydrogen atom, a nitrogen atom, a sulfur atom, and an oxygen atom.

13. The optical recording medium according to claim 1, wherein the recording layer (A) contains at least one kind of organic compound that absorbs said laser light and has a temperature at which the color changes by heat.

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14. The optical recording medium according to claim 1, wherein the recording layer (A) contains at least one kind of organic compound that absorbs said laser light and forms a crystalline state exothermically when an amorphous state is heated.

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15. The optical recording medium according to claim 1, wherein said recording layer (A) contains at least one kind of organic compound for exhibits maximum absorption wavelength (λ_{\max}^2) in said recording layer (A) after recording that is different from that (λ_{\max}^1) before recording in said recording layer (A) by irradiation with recording laser light.

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16. The optical recording medium according to claim 1, wherein said recording layer (A) contains at least one kind of organic compound that, upon irradiation with a laser light with a recording/playback wavelength of λ_0 , exhibits a refraction index n_2 and an extinction coefficient k_2 after recording that are different from the refraction index n_1 and the extinction coefficient k_1 of said recording layer (A) at λ_0 before recording.

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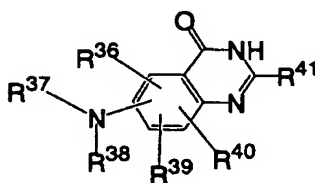
17. The optical recording medium according to claim 1, wherein

the maximum absorption wavelength of the organic compound in solution is shifted to the shorter wavelength when it forms a thin film state of the recording layer.

5 18. A compound represented by general formula (5).

19. A quinazolin-4-one compound represented by general formula (6) having a disubstituted amino group at any of positions 5-8 in the quinazoline -4- ring:

10 [Formula 7]

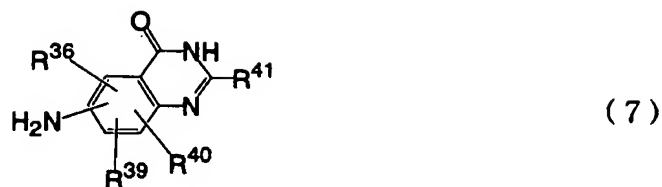


(6)

(wherein each of R^{36} - R^{41} represents independently a hydrogen atom or a substituent).

15 20. A process for producing of the quinazolin-4-one compound represented by general formula (6) producing by reaction of a compound represented by the following general formula (7) and a compound represented by general formula (8) and/or general formula (9):

20 [Formula 8]



(wherein R^{36} - R^{41} represent the same group as R^{36} - R^{41} in formula (6); and Z^1 and Z^2 represent a leaving group).

21. A composition comprising at least one kind of compound represented by general formula (5).

22. An optical recording medium comprising a recording layer (A) capable of recording/playback with a laser light on a substrate, wherein the recording layer (A) contains at least one kind of organic compound, wherein recording can be carried out by heat generated on irradiation of said recording layer (A) with recording laser light of 6 mW or lower and/or by the laser light without giving mechanical deformation to the substrate.